



This is a section from the

2018

Mid-Atlantic

Commercial Vegetable

Production Recommendations

The manual, which is published annually, is **NOT** for home gardener use.

The **full manual**, containing recommendations specific to New Jersey, can be found on the Rutgers NJAES website in the Publications section:

<http://njaes.rutgers.edu/pubs/publication.asp?pid=E001>.

The **label** is a legally-binding contract between the user and the manufacturer. The user must follow all rates and restrictions as per label directions. The use of any pesticide inconsistent with the label directions is a violation of Federal law.

Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Chosen Freeholders. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

F. Commodity Recommendations

Pesticide Use Disclaimer

THE LABEL IS THE LAW

Before using a pesticide, check the label for up to date rates and restrictions.

Labels can be downloaded from: <http://www.cdms.net/>, <http://www.greenbook.net/> or <http://www.agrian.com/labelcenter/results.cfm>

Guide to the Recommended Pesticide Tables in the Following Crop Chapters:

1. Pesticides are listed by **group or code number based on chemical structure and mode of action**, as classified by the Weed Science Society of America (WSSA) for herbicides, the Insecticide Resistance Action Committee (IRAC) for insecticides, and the Fungicide Resistance Action Committee (FRAC) for fungicides.
If the number is in bold font, the product may have resistance concerns.
2. For **restricted use pesticides**, the restricted active ingredients are labeled with a *. See the Pesticide Safety chapter for more information.
3. **In addition to the pesticides listed below, other formulations or brands with the same active ingredient(s) may be available. ALWAYS CHECK THE LABEL:**
 - a) to ensure a pesticide is labeled for the same use,
 - b) to ensure the pesticide is labeled for the desired crop, and
 - c) for additional restrictions.
4. All pesticide recommendations are made for spraying a **broadcast area of 1 acre** (43,560 square feet). **Adjust the rate for banded applications** (for more information, see the Pest Management chapter, Calibrating Granular Applicators section).
5. Check the label for the maximum amount of pesticide per application and the maximum number of applications per year.
6. **Bee Toxicity Rating (Bee TR):** N=nontoxic; L=minimum impact on bees; M=moderately toxic, can be used if dosage, timing and method of application are correct, but should NOT be applied directly to crop if bees are present; H=highly toxic, severe losses expected, -- = data not available.

Parsnips

Recommended Varieties	Albion (hybrid)	Harris Model	Javelin (hybrid)
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Recommended Nutrients Based on Soil Tests

In addition to using the table below, check the suggestions on rate, timing, and placement of nutrients in your soil test report and the Soil and Nutrient Management chapter. Your state's soil test report recommendations and/or your farm's nutrient management plan supersede recommendations found below.

Parsnips	N (lb/A)	Soil Phosphorus Level				Soil Potassium Level				Nutrient Timing and Method
		Low	Med	High (Opt)	Very High	Low	Med	High (Opt)	Very High	
		P ₂ O ₅ (lb/A)				K ₂ O (lb/A)				
	50-75	150	100	50	0	150	100	50	0	Total nutrient recommended
	25-50	150	100	50	0	150	100	50	0	Broadcast and disk-in
	25-50	0	0	0	0	0	0	0	0	Sidedress 4-5 weeks after planting

Apply 1-2 lb/A of boron (B) with broadcast fertilizer; s See also Table B-7 in the Soil and Nutrient Management chapter.

Seeding and Spacing

Seeds germinate slowly. Never use seed that is more than 1 yr old. In March and April, seed 3-5 lb/A at a depth of ¼-3/8 inch in rows 18-30 inches apart. Adjust seeder to give 8-10 plants/ft of row. Thin seedlings to 2-4 inches in the row.

Harvest and Postharvest Considerations

Parsnips may be dug, topped, and stored at 32°F (0°C). Storage relative humidity must be kept high (90-95%) to prevent wilting; ventilated plastic crate liners help to prevent moisture loss. Parsnips can be stored for up to 6 months. Good market quality is the result of starch changing to sugar which occurs after 2-3 weeks in storage below 35°F (2°C); leaving parsnips in the ground over winter or freezing them is not necessary. If parsnips are left in the ground over winter, remove them before growth starts in the spring.

Weed Control

THE LABEL IS THE LAW - See the Pesticide Use Disclaimer on page F 1.

Recommended Herbicides

- Identify the weeds in each field and select recommended herbicides. More information is available in the "Herbicide Effectiveness on Common Weeds in Vegetables" Table (E-2) in the Pest Management chapter.
- Minimize herbicide resistance development. Identify the herbicide site mode of action group and follow recommended good management practices. Include non-chemical weed control whenever possible.

1. Soil-Applied (Preemergence)						
Group	Product Name	Product Rate	Active Ingredient (*=Restricted Use)	Active Ingredient Rate	PHI (d)	REI (h)
7	Lorox 50DF Linex 4L	1.5 to 3 lb/A 1.5 to 3 pt/A	linuron	0.75 to 1.5 lb/A	--	24

-Apply right after seeding, but before crop emergence. Plant seed at least 0.5 inch deep.

2. Postemergence						
Group	Product Name	Product Rate	Active Ingredient (*=Restricted Use)	Active Ingredient Rate	PHI (d)	REI (h)
1	Select 2EC Select Max 0.97EC	6 to 8 fl oz 9 to 16 fl oz/A	clethodim	0.07 to 0.12 lb/A	30	24
1	Poast 1.5EC	1.0 to 2.5 pt/A	sethoxydim	0.2 to 0.5 lb/A	14	12

2. Postemergence (Select, Select Max, Poast) continued on next page

F Parsnips

2. Postemergence (Select, Select Max, Poast) - continued

-**Select 2EC:** use crop oil concentrate (COC) at 1% v/v (1 gal/100 gal of spray solution). **Select Max:** use nonionic surfactant (NIS) at 0.25% v/v (1 qt/100 gal of spray solution). **Poast:** Apply with COC at 1.0% v/v. **The use of COC may increase the risk of crop injury when hot or humid conditions prevail.** To reduce the risk of crop injury, omit additives or switch to nonionic surfactant when grasses are small and soil moisture is adequate. Use lower labeled rates for annual grass control and higher labeled rates for perennial grass control.

-Yellow nutsedge, wild onion, wild garlic, and broadleaf weeds will not be controlled. Controls many annual and certain perennial grasses, including annual bluegrass, but will not consistently control goosegrass. Control may be reduced if grasses are large or under hot or dry weather conditions. If repeat applications are necessary, allow 14 days between applications.

-**Do not** tank-mix with or apply within 2 to 3 days of any other pesticide - unless labeled - as this may increase the risk of crop injury or reduce the control of grasses.

-Rainfastness 1 hr.

-**Do not** apply more than 8 fl oz of Select 2EC in a single application and **do not** exceed 2 pt/A for the season; **do not** apply more than 16 fl oz of Select Max in a single application and **do not** exceed 4 pt/A for the season.

-**Do not** apply more than 2.5 pt/A Poast in single application and **do not** exceed 2.5 pt/A for the season.

3. Postharvest

Group	Product Name	Product Rate	Active Ingredient (* = Restricted Use)	Active Ingredient Rate	PHI (d)	REI (h)
22	Gramoxone SL 2.0	2.25 to 3 pt/A	paraquat*	0.56 to 0.75 lb/A	--	24

-A Special Local-Needs 24© label has been approved for the use of Gramoxone SL 2.0 for postharvest crop desiccation in DE, NJ and VA. Apply after the last harvest. Always include an adjuvant. Spray coverage is essential for optimum effectiveness. See the label for additional information and warnings. Rainfastness 30 minutes. A maximum of 2 applications for crop desiccation are allowed.

4. Other Labeled Herbicides These products are labeled but limited local data are available; and/or are labeled but not recommended in our region due to potential crop injury concerns.

Group	Product Name	Active Ingredient (* = Restricted Use)
14	Aim	carfentrazone

Insect Control

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Recommended Insecticides

Aphids

Aphids are small soft bodied insects, usually green or yellow colored. They are found on the underside of leaves and/or on stems. If aphid infestation is heavy it may cause: yellowing or distorted leaves, necrotic spots on leaves and stunted shoots. Aphids secrete a sticky, sugary substance called honeydew which encourages the growth of sooty mold. Plants generally tolerate low to medium levels of infestations.

Apply one of the following formulations:

Group	Product Name	Product Rate	Active Ingredient(s) (* = Restricted Use)	PHI (d)	REI (h)	Bee TR
1B	Malathion 57EC	1.0 to 2.0 pt/A	malathion	7	24	H
4A	Admire Pro	4.4 to 10.5 fl oz/A	imidacloprid - soil	21	12	H
4A	Admire Pro	1.2 fl oz/A	imidacloprid - foliar	7	12	H
4A	Platinum 75SG	1.7 to 4.0 oz/A	thiamethoxam - soil	7	12	H
4A	Actara 25WDG	1.5 to 3.0 fl oz/A	thiamethoxam - foliar	7	12	H
4C	Closer 2SC	1.5 to 2.0 fl oz/A	sulfoxaflor	7	12	H
4D	Sivanto 200SL	7.0 to 10.5 fl oz/A	flupyradifurone	7	4	L
9C	Beleaf 50SG	2.0 to 2.8 fl oz/A	flonicamid	3	12	L
n/a	Ecozin Plus (OMRI)	15.0 to 30.0 oz/A	azadirachtin	0	4	N

Leafhoppers

Leafhoppers suck sap and plant juices, causing small white spots (stippling) on the upper leaf surface, usually beginning near the midrib. Stippled areas can coalesce into larger whitish blotches on mature leaves. Prolonged feeding causes a drying and yellowing (or browning) of leaf margins, and possibly the whole leaf. Some leafhopper species cause curling or stunting of terminal leaves.

Some leafhoppers species can transmit aster yellows, which cause a yellowing of leaves while the veins remain green. Aster yellows also slows down growth and leaves may be smaller and narrower. The spread of aster yellows is worse in a cool, wet summer. Row covers can be used to eliminate leafhoppers. Control weeds such as plantain and dandelion that may harbor the disease. In our area leafhoppers only occasionally require treatment.

Apply one of the following formulations:						
Group	Product Name	Product Rate	Active Ingredient(s) (*=Restricted Use)	PHI (d)	REI (h)	Bee TR
1A	Sevin Plus XLR	0.5 to 1.0 qt/A	carbaryl	7	12	H
4A	Admire Pro	4.4 to 10.5 fl oz/A	imidacloprid - soil	21	12	H
4A	Admire Pro	1.2 to 4.0 fl oz/A	imidacloprid - foliar	7	12	H
4A	Platinum 75SG	1.7 to 4.0 oz/A	thiamethoxam - soil	7	12	H
4A	Actara 25 WDG	1.5 to 3.0 oz/A	thiamethoxam - foliar	7	12	H
4C	Closer 2SC	2.75 to 5.75 fl oz/A	sulfoxaflor	7	12	H

Whiteflies

While whiteflies are not very common pests on parsnips they can occasionally build their populations up and need treatment. Whiteflies use their piercing, sucking mouthparts to suck sap from phloem tissues in plant stems and leaves. Large populations can cause leaves to turn yellow and die. Whiteflies excrete honeydew, so leaves may be sticky or covered with black sooty mold that grows on the honeydew.

Apply one of the following formulations:						
Group	Product Name	Product Rate	Active Ingredient(s) (*=Restricted Use)	PHI (d)	REI (h)	Bee TR
4A	Admire Pro	4.4 to 10.5 fl oz/A	imidacloprid - soil	21	12	H
4A	Admire Pro	1.2 fl oz/A	imidacloprid - foliar	7	12	H
4A	Platinum 75SG	1.7 to 4.0 oz/A	thiamethoxam - soil	7	12	H
4A	Actara 25WDG	1.5 to 3.0 oz/A	thiamethoxam - foliar	7	12	H
4D	Sivanto 200SL	10.5 to 14.0 fl oz/A	flupyradifurone	7	4	L
4C	Closer 2SC	4.25 to 5.75 fl oz/A	sulfoxaflor	7	12	H
9C	Beleaf 50SG	2.8 fl oz/A	flonicamid	3	12	L

Disease Control

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Recommended Fungicides

Damping-Off caused by *Phytophthora* and *Pythium*

Code	Product Name	Product Rate	Active Ingredient(s) (*=Restricted Use)	PHI (d)	REI (h)	Bee TR
Apply the following preplant incorporated or as a soil-surface spray after planting:						
4	Ridomil Gold 4SL	1.0 to 2.0 pt/A	mefenoxam	0	48	N
4	Ultra Flourish 2E	2.0 to 4.0 pt/A	mefenoxam	AP	48	N

Leaf Spots (*Alternaria* and *Cercospora*), Rhizoctonia Stem Canker, and Powdery Mildew

Rotate fields to allow at least 2 yr between parsnip plantings. Always plant in well-drained soils with a pH of 7.0. Ridge soil over shoulders to prevent pathogen infection. Begin sprays at the first sign of disease and repeat no more than 3 times at 10-day intervals. **Do not** make more than one consecutive application of a FRAC code 11 fungicide.

Code	Product Name	Product Rate	Active Ingredient(s) (*=Restricted Use)	PHI (d)	REI (h)	Bee TR
Rotate, or tank-mix the following						
M5	chlorothalonil 6F	1.5 to 2.0 pt/A	chlorothalonil	10	12	L
WITH ONE of the following FRAC code 11 fungicides:						
7 + 11	Merivon 2.09SC	4.4 to 5.5 fl oz/A (use highest rate for <i>Cercospora</i> leaf spot)	fluxapyroxad + pyraclostrobin	7	12	N
11	azoxystrobin 2.08F	9.0 to 15.5 fl oz/A	azoxystrobin	0	12	N
11	Cabrio 20EG	8.0 to 12.0 oz/A	pyraclostrobin	0	12	N
11	Gem 500SC	1.9 to 2.9 oz/A	trifloxystrobin	7	12	N

For Immediate Medical Attention

Call 911

**For a Pesticide Exposure Poisoning
Emergency Call**



For All States

This number will automatically connect you to the poison center nearest you.

Anyone with a poisoning emergency can call the toll-free telephone number for help. Personnel at the Center will give you first-aid information and direct you to local treatment centers if necessary.

For Pesticide Spills

Small Spills: See the product label for cleanup advice.

Large spills: Call the National Response Center at 1-800-424-8802 or CHEMTREC at 800-424-9300 (24 hours) - Industry assistance with emergency response cleanup procedures for large, dangerous spills.

Be aware of your responsibility to report spills to the proper state agency.